Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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DEVAL L. PATRICK
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Secretary

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MassDEP
Bureau of Waste Prevention
Division of Consumer and Transportation Programs

310 CMR 60.02: Massachusetts Motor Vehicle Emissions Inspection and Maintenance Program

Background Document and Technical Support for Public Hearing

Regulatory Authority: Massachusetts General Laws, Chapter 111, Sections 142A through 142M

August 2013

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To Consider Amendments to:

310 CMR 60.02: Massachusetts Motor Vehicle Emissions Inspection and Maintenance Program

August 2013

The Massachusetts Department of Environmental Protection (MassDEP) is proposing amendments to the Massachusetts Motor Vehicle Emissions Inspection and Maintenance Program Regulation, 310 CMR 60.02 to:

1. Implement the kit vehicle requirements of Chapter 311 of the Acts of 2010, an Act Relative to the Registration and Inspection of Street Rods and Custom Vehicles, enacted by the Legislature August 19, 2010 and effective April 30, 2011;
2. Increase the flexibility for becoming a Registered Repairer for diesel vehicles by recognizing the new A9 (Light Vehicle Diesel Engines) certification issued by the Institute for Automotive Service Excellence (ASE); and
3. Delete those sections effective prior to October 1, 2008, which were necessary for the transition to new testing requirements.

This document summarizes the proposed amendments to 310 CMR 60.02 and describes key issues on which MassDEP seeks public comment. It also describes the impact of these regulation (and program) changes on air quality and the Commonwealth's economy. The proposed amendments can be found in Appendix A.

As required by M.G.L. c. 111, Section 142K and M.G.L. c. 30A, MassDEP seeks public comment on these proposals. Information about public hearings and how to submit written comment will be provided in the notices of the public hearing.

I. INTRODUCTION

Ground-level ozone is a photochemical oxidant that can cause lung dysfunction and eye, nose and throat irritation. Ozone is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NOx) react in the presence of sunlight and heat. Unhealthy concentrations of ozone occur most frequently during hot summer months. Motor vehicles are a significant source of ozone precursors.

Ozone irritates the respiratory system and may cause coughing and shortness of breath. It also can exacerbate respiratory illness and reduce resistance to infection. Ozone is of particular concern for children, people with asthma and other chronic respiratory diseases, and people exercising or working outdoors for prolonged periods during the ozone season. Ozone also damages forests and other vegetation, agricultural crops, and natural and synthetic materials.

Pursuant to the federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established health-based National Ambient Air Quality Standards ("NAAQS") for ozone. The entire state of Massachusetts is designated as nonattainment for the 1997 ozone standards.

The federal Clean Air Act requires that a motor vehicle Inspection and Maintenance (I&M) Program be part of the State Implementation Plan (SIP) for the attainment of the ozone NAAQS. Performance standards for I&M programs are set by EPA[1]. The performance standards include the requirement to conduct an emissions test of 1996 and newer light-duty vehicles using the vehicles' On-board Diagnostic (OBD) system[2].

In January, 2008, Massachusetts submitted a SIP to EPA that demonstrates how it will attain the 1997 ozone standards. The SIP included the I&M Program.

The Massachusetts Department of Environmental Protection (MassDEP) and the Massachusetts Registry of Motor Vehicles (RMV) jointly administer the I&M Program. The I&M program, as established in 1999, has four goals:

- To reduce vehicle pollution;
- To identify unsafe vehicles;
- To ensure that the program is convenient and reasonably priced for the public; and
- To promote effective repairs by designing the program to fit well with the repair industry.

The current Massachusetts I&M program was authorized by the Legislature by Chapter 210 of the Acts of 1997, codified at M.G.L. c. 111, § 142M. Implementing regulations (310 CMR 60.02) were initially adopted in January 1999 and were most recently revised in September 2008**.** Since 2008, the program has been implemented through a contract with Parsons Commercial Technology Group, Inc. (Parsons).

[1] 40 CFR Part 51, Subpart S (§51.350 et seq.).

[2] The On-board Diagnostic system (OBD system) is a system of vehicle components and sensors controlled by a computer on the vehicle designed to signal the motorist when a problem is detected with an emissions control system or component, or with the on-board diagnostic system itself.

II. BACKGROUND

Kit Vehicles

A kit vehicle (also known as a kit car) is initially sold as a partially-completed new vehicle, which usually includes a vehicle frame and body, and may include some or all front suspension components. The purchaser completes construction of the vehicle by installing a drive train (engine, transmission and rear end). The purchaser also installs any other necessary components not included with the purchased kit, such as a fuel tank, the exhaust system, suspension components, air conditioning system, etc. A kit vehicle may be intended to replicate the appearance of an earlier model vehicle (e.g., 1965 Cobra, 1933 Roadster) or may be unique-looking with no semblance to a production vehicle.

Because kit vehicles are sold without an engine, EPA has issued a policy addressing how to properly power kit vehicles and still be in compliance with emission standards for new onroad motor vehicles. The EPA policy requires that the drivetrain installed in a kit vehicle come from an existing vehicle, called a donor vehicle. By transplanting the drive train from the donor vehicle, the kit vehicle owner can rely on the emissions certification for the donor vehicle to satisfy emission standards for the new kit vehicle.

EPA's policy requires that all of the donor vehicle's emissions-related systems and components be installed in the kit vehicle. It also requires that any oxygen sensors, catalytic converters, and evaporative control canisters be new. This provides a reasonable assurance that, during its useful life, the new kit vehicle will not contribute more to air quality problems than would the donor vehicle.

There are approximately 4.6 million vehicles registered in Massachusetts. Of these, approximately 400 are registered as some type of kit vehicle. Under the current I&M Program requirements, all kit vehicles are required to obtain an annual safety inspection.

Effective October 1, 2008, to coincide with the transition to Parsons as the network contractor, I&M Program changes included the replacement of biennial tailpipe and OBD emissions tests with annual OBD-only emissions tests. To replace the tailpipe emissions test previously applicable to kit vehicles, kit vehicles were required to comply with EPA's kit car policy when first registered or upon transfer of ownership. If the donor vehicle for a kit vehicle drive train was required to be equipped with an OBD system, then the kit vehicle was required to receive the same OBD emissions test the donor vehicle would have received.

Chapter 311 of the Acts of 2010, An Act Relative to the Registration and Inspection of Street Rods and Custom Vehicles, was enacted by the Legislature on August 19, 2010, and became effective April 30, 2011. This legislation affects emissions-related requirements for kit vehicles.

The 2010 legislation established the following four categories of vehicles[3]:

- Street rod: a motor vehicle for which the year of manufacture is prior to 1949, and which has been altered from the manufacturer's original design or has a body constructed from non-original materials.

[3] The four category definitions are taken directly from the legislation.

- Custom vehicle: a motor vehicle for which the year of manufacture is after 1948, for which the model year is at least 25 years old and that has been altered from the manufacturer's original design or has a body constructed, in whole or in part, from non-original materials.
- Replica vehicle: a motor vehicle constructed or assembled by a non-manufacturer from new or used parts that, when assembled, replicates an earlier year, make and model vehicle.
- Specially-constructed vehicle: a motor vehicle reconstructed or assembled by a non-manufacturer from new or used parts, the exterior of which does not replicate or resemble any other manufactured vehicle.

The legislation establishes titling and registration requirements for the above-listed vehicles and establishes three emissions-related requirements. First, the legislation waives street rods and custom vehicles from the I&M Program's emissions requirements; therefore, the regulation addresses kit vehicles only, i.e. replica and specially-constructed vehicles. Since street rods and custom vehicles are, by definition, more than 15 model years old and since all light-duty vehicles more than 15 model years old are already exempt from the emissions test, the legislation makes no change to their status.

Second, the legislation exempts replica and specially-constructed vehicles (the two types of kit vehicles) from emissions requirements if the vehicle is first registered in Massachusetts by April 30, 2012, and if the registration and titling requirements of the legislation are met. The exemption provides additional time for enthusiasts who had started construction of these vehicles under prior emissions requirements to complete construction.

Third, replica and specially-constructed (kit) vehicles first registered in Massachusetts after April 30, 2012, will be required to meet emissions requirements based on the model year of the engine that is installed. As with the current regulation, these vehicles will be required to receive a visual emissions inspection when first registered and upon transfer of ownership and, depending on the engine model year, an annual OBD emissions test.

Registered Repair Technicians

Under 310 CMR 60.02, noncommercial vehicles that fail the OBD emissions test may be eligible for a waiver if the repairs performed on the vehicle were done by a registered repair technician, among other criteria. They may also be eligible for an economic hardship failure extension if the repair estimate is provided by a registered repair technician.

One criterion for becoming a registered repair technician is to have an advanced certification from the Institute for Automotive Service Excellence (ASE) appropriate for the fuel of the vehicles (gasoline or diesel). The independent and non-profit ASE was established in 1972. Its mission is to improve the quality of vehicle repair and service through the testing and certification of repair and service professionals. In addition to the A-series certifications for a variety of vehicle-related repair areas (e.g., engines, brakes, transmissions, etc.), ASE issues more advanced L-series certifications for more sophisticated vehicle systems, including electronic controls and OBD. The L1 certification is for gasoline vehicles, while L2 is for diesel vehicles.

Prior to OBD testing of diesel vehicles, only an ASE L1 certification was required to become a registered repair technician. With the start of emissions testing of OBD-equipped light- and medium-duty diesel vehicles on October 1, 2008, it became necessary to establish eligibility criteria for registered repair technicians for diesel vehicles. At that time, the only advanced diesel-related certification available from ASE was its L2 certification, Electronic Diesel Engine Diagnosis Specialist. Since most of the diesels were medium-duty vehicles, this certification was appropriate.

Vehicle manufacturers have significantly expanded their diesel engine options for light-duty vehicles. ASE has recognized this change and has issued a new certification, A9, Light Vehicle Diesel Engines.

MassDEP is proposing to amend the requirements to become a registered repair technician specializing in the repair of diesel vehicles by also allowing the inclusion of applicants who have both their ASE L1 and ASE A9 certifications, in addition to applicants who have their ASE L-2 certification. This expands the options for becoming a registered repair technician for diesel vehicles.

III. SUMMARY OF PROPOSED AMENDMENTS TO 310 CMR 60.02

The I&M regulation is proposed to be modified to comply with the requirements of Chapter 311 of the Acts of 2010: An Act Relative to the Registration and Inspection of Street Rods and Custom Vehicles. This legislation took effect on April 30, 2011.

<u>Definitions</u>

- The following terms have been defined: street rods, custom vehicles, replica vehicles, and specially-constructed vehicles.
- The definition of kit vehicles has been amended.
- The definition of non-manufacturer has been added.

<u>Replica and specially-constructed (kit) vehicles registered on or before April 30, 2012</u>

- Replica and specially-constructed (kit) vehicles, first registered in Massachusetts on or before April 30, 2012, and meeting the registration and titling requirements, will no longer be subject to emission inspection requirements.

<u>Replica and specially-constructed (kit) vehicles registered after April 30, 2012</u>

- Replica and specially-constructed (kit) vehicles that are first registered in Massachusetts after April 30, 2012, will be required to have a visual inspection to verify that they comply with applicable emission control requirements. The visual inspection will also be required for these vehicles upon change of ownership. A list of the documentation that must be provided for the visual inspection will be posted on the Enhanced Emissions and Safety Test Program web site.
- The existing prohibition on the use of new engines is being modified to allow new engines in two circumstances:

- if the kit vehicle owner permanently retires another vehicle and destroys its engine, [4] the owner may install a new engine in the kit vehicle provided that the engine is of approximately the same size or smaller and of the same model year as the vehicle that is permanently retired, and the kit vehicle is equipped with the emissions controls required for the model year of the engine; or,
- if the kit vehicle owner purchases a new certified configuration that is certified by the California Air Resources Board[5], the model year of which is no more than one model year older than the year in which the kit vehicle is first registered.

- The transmission requirements are simplified to require the OBD system in OBD-equipped vehicles to only monitor the transmission to the extent that the transmission was monitored in its originally certified configuration.
- The requirement to label the vehicle for unleaded fuel is deleted, since the kit vehicle will be required to be equipped with an unleaded-fuel fill neck restrictor if its certified configuration required the use of unleaded fuel.
- Vehicle identification and tune-up standards are required to accompany the vehicle, in lieu of being on a label attached to the vehicle.

<u>Registered Repairer Technicians specializing in the repair of diesel vehicles</u>

- The requirements have been modified to include applicants that hold both an ASE L1 and an ASE A9 certification.

<u>General</u>

- The sections of the regulation containing I&M requirements that ceased to be in effect after September 30, 2008 have been deleted and the title has been reserved.

- Sections with requirements that took effect on October 1, 2008 remain in effect, although the words "effective beginning October 1, 2008" have been removed.

Proposed revisions to 310 CMR 60.02 can be found in Appendix A.

IV. KEY ISSUES

Kit Cars

Chapter 311 of the Acts of 2010 "An Act Relative to the Registration and Inspection of Street Rods and Custom Vehicles," effective April 30, 2011, requires some revisions to the kit vehicle-related provisions of 310 CMR 60.02.

[4] Permanently retiring another vehicle and destroying its engine involves taking an existing vehicle and permanently destroying the engine so that the engine can never be used again and permanently retiring the vehicle so that that the vehicle can never be registered again.

[5] In response to California's kit vehicle requirements, some vehicle manufacturers are considering making complete drivetrains available for installation in kit vehicles. These drivetrains are the same configuration as what is California emissions-certified for their new vehicles. For example, Chevrolet may make available the complete drivetrain configuration certified for a new Camaro sports car available for use in kit vehicles. As a result, the kit vehicle owner would not need to buy a complete new Camaro just to get its drivetrain.

The proposed regulation will now allow replica and specially-constructed (kit) vehicles that were registered in Massachusetts on or before April 30, 2012 to be exempt from current emission requirements. This extends by three years and seven months the period during which uncontrolled kit vehicles may be constructed, instead of being constructed in compliance with EPA's kit car policy.

The proposed regulation will also allow kit vehicle owners the flexibility to install new engines in their kit vehicles and to meet simplified transmission requirements. The option to acquire a new kit vehicle engine was not a possibility back in 1994 when EPA initiated the current kit car policy, so although the use of new engines will not be in strict compliance with EPA's kit car policy, it will provide greater emissions benefits than EPA's kit car policy.

V. AIR QUALITY IMPACTS

The current regulations implement EPA's kit car policy, effective October 1, 2008. The kit car emissions provisions were intended to prevent the construction of new motor vehicles with no emissions controls. EPA's kit car policy accomplishes this by requiring that a kit vehicle transplant the drive train from a donor vehicle, including all of the emission controls required for the donor vehicle.

Two revisions to the current kit car provisions have the potential for air quality impacts: the extension of the registration date before which the emission control exemption applies (i.e., April 30, 2012) and the increased flexibility for kit vehicles to meet emissions requirements beyond the strictures of EPA's kit car policy.

The extension of the applicability of emissions control requirements from October 1, 2008, to April 30, 2012, establishes a window of three years and seven months during which kit vehicles may be registered for operation without emissions controls. Because it is estimated that only 50-75 kit vehicles will be registered during this period and because kit vehicles typically travel less than 3,000 miles per year, the air quality impacts resulting from this revision will be minimal.

The increased flexibility beyond EPA's kit car policy is expected to result in lower overall emissions than adherence to the policy alone. Under EPA's kit car policy, only used or used and rebuilt engines were permitted. The increased flexibility allows new engines to be used if the kit vehicle owner:

- permanently retires another vehicle and destroys its engine, and
- uses a new engine that is the same model year and of approximately the same displacement (or smaller), and
- installs all of the emission controls required for the model year of the vehicle that was permanently retired.

The new engine is expected to be built to tighter tolerances than were used for older engines, including taking advantage of increases in efficiency and materials compared to older, used engines. A kit vehicle owner that chooses the option to permanently retire a vehicle and destroy its engine will likely retire an older vehicle, because purchase of an older vehicle is more cost

effective. The permanent retirement of that older vehicle and the destruction of its engine ensure that it will no longer be a source of emissions. This is a net benefit for air quality.

The increased flexibility also allows new, California-certified engines to be installed in kit vehicles. Certain new kit vehicles in California must meet emissions standards for the year the vehicle was constructed. This has created a market for new, emissions-compliant drivetrains for the kit vehicle market. This would be equivalent to taking the drive train of a new sports car and placing it in a kit vehicle. Emissions are much lower than using a used engine, as required by EPA's kit car policy, providing a net benefit to air quality.

In the long term, the impact of the additional 50-75 kit cars that may not have emissions controls should be offset by the benefit of newer, cleaner engines being used than would result from EPA's kit car policy.

There should also be an air quality benefit associated with the addition of a new diesel registered repair technician option. Because the new ASE A9 certification is focused on light-duty diesel vehicles, repair technicians with this certification are expected to be more effective at the diagnosis and repair of OBD-equipped light duty diesel vehicles than repair technicians with the ASE L2 certification that focused on larger diesel vehicles. This improved performance is expected to have a positive impact on air quality. The impact may be minimal because the diesel fraction of the fleet is so small. However, with increased focus on fuel economy and greenhouse gases, diesel vehicles are increasing in market share. As this occurs, repair technicians with A9 certification will provide a commensurate increased air quality benefit.

VI. ECONOMIC IMPACTS

Following are the stakeholder groups that may realize changes in costs or revenues associated with the kit vehicle regulatory revision:

- Kit vehicle owners registering kit vehicles by April 30, 2012
- Kit vehicle owners registering kit vehicles after April 30, 2012
- Kit vehicle manufacturers and suppliers

Kit vehicle owners registering kit vehicles by April 30, 2012 will realize a cost reduction associated with this regulatory revision. Absent the extension to the compliance deadline in the proposed amendment, these vehicle owners may have incurred additional costs to bring their vehicles into compliance with EPA's kit car policy. The major cost item would likely have been replacement of the engine in a non-complying kit vehicle. Related costs would have included new catalytic converters, oxygen sensors, and evaporative emissions reduction canisters.

Kit vehicle owners registering a kit vehicle after April 30, 2012, may realize increased costs or a cost savings associated with this regulatory revision. The increased flexibility provisions that allow the destruction of the engine in an older vehicle to offset the use of a new replacement engine may put upward pressure on the cost of the kit vehicle. However, the use of a new engine, in lieu of a used engine, may result in a long-term savings through decreased maintenance when compared to the used engine.

The increased flexibility provisions that allow the option to use a new engine as part of a California-certified new vehicle configuration may represent higher initial costs compared to the used engine-only option under EPA's kit car policy. However, the new engine will likely be more fuel-efficient and more reliable, resulting in lower long-term fuel and maintenance costs, and this is an optional cost for the kit vehicle owner.

Kit vehicle manufacturers that do not offer kits for emissions-controlled vehicles may incur retooling costs so their kits will accommodate vehicle emissions controls, such as catalytic converters and evaporative control canisters. However, since California already requires certain kit vehicles to have emissions controls, the retooling costs cannot be entirely attributable to Massachusetts.

Kit vehicle manufacturers and businesses supplying components to kit vehicle owners may notice an increase in revenue associated with this regulatory revision. The provisions adding flexibility are expected to make kit vehicles more attractive to enthusiasts, resulting in increased sales of kits and the supplies needed to complete them.

Following are the stakeholder groups that may realize changes in costs or revenues associated with the new registered diesel repair technician certification option:

- Registered repair technicians
- Registered repair technician trainers
- Registered repair shops

Registered repair technicians may incur additional costs if additional training is necessary for certification. If their employers opt to pay for this training, then the increased cost would be incurred by repair shop owners. Registered repair technicians may be able to command a better wage if they become registered repairers for light diesels, since this increases employee value by expanding the range of vehicles the repair shop may attract for service and repair.

Registered repair technician training will likely realize an increase in revenue from training provided to A9 candidates.

Registered Repair shops may incur increased costs if they pay for the technician's training and will likely incur increased costs associated with the increased wages the technician may command as a result of this higher-level certification. However, the shop may realize additional business associated with being a registered repair facility for light-duty diesel vehicles. The improvement in service provided by a certified technician should result in lower costs from fewer call-backs (which result from unsuccessful service on the first attempt), and increased customer loyalty from better diagnostic and repair services.

Neither the kit vehicle revisions nor the registered diesel repair technician revisions are expected to have any impact on inspection stations.

VII. IMPACT ON OTHER MASSDEP PROGRAMS

A. Air Toxics

Air toxics are a group of chemical air contaminants, defined by EPA, that have been associated with wide-ranging and significant adverse health effects such as cancer, birth defects, and central nervous system impairments. EPA regulates air toxics under the Clean Air Act. In addition, MassDEP controls air toxics through its Toxics Use Reduction Program and other programs that are aimed at reducing ozone. Many air toxics are VOCs, which are regulated as ozone precursors. The proposed amendments relative to kit cars only impact a very small number of vehicles, and the proposed amendments creating a new repair technician certification category will impact a small portion of the motor vehicles in the Commonwealth. The amendments eliminating references to pre-October 1, 2008 requirements are merely procedural. It is not anticipated that these proposed amendments will have any significant effect on air toxics emissions, although they may have a small overall reduction in toxics from vehicle emissions.

B. Toxics Use Reduction

Toxics use reduction is defined as in-plant or in-process practices that reduce or eliminate the use and emissions of toxic materials into the environment. Implementation of toxics use reduction, when possible, is a MassDEP priority. The proposed regulations do not regulate in-plant or in-process practices and therefore will not have any effect on the use and emissions of toxic materials.

VIII. AGRICULTURAL IMPACTS

Pursuant to Massachusetts General Laws, Chapter 30A, Section 18, State agencies must evaluate the impact of proposed programs on agricultural resources within the Commonwealth. The proposed amendments do not impose any requirements upon agricultural operations and are not anticipated to have any effect on agriculture.

IX. IMPACT ON MASSACHUSETTS MUNICIPALITIES

Pursuant to Executive Order 145, State agencies must assess the fiscal impact of new regulations on the Commonwealth's municipalities. The proposed amendments do not impose any additional direct costs, recordkeeping, reporting, or other requirements on local governments.

X. MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

The proposed amendments are exempt from the "Regulations Governing the Preparation of Environmental Impact Reports," 301 CMR 11.00, in that no MEPA review threshold set forth in 310 CMR 11.03 is met or exceeded. In addition, these proposed amendments do not reduce standards for environmental protection, nor do they reduce opportunities for public participation in review processes or public access to information generated or provided in accordance with the

regulations. (See MEPA review threshold pertaining to promulgation of regulations at 301 CMR 11.03(12)).

XI. PUBLIC PARTICIPATION

MassDEP is providing notice of, and an opportunity to review, these proposed amendments, the background document, and any technical information. The Department will hold two public hearings on these proposed amendments. The first hearing will be held at 1:30pm on Monday, October 28, 2013 at MassDEP's Headquarters, One Winter Street, Boston. The second hearing will be held at 7pm on Tuesday, October 29, 2013 at MassDEP's Southeast Regional Office, 20 Riverside Drive, Lakeville. These hearings will be held in accordance with the procedures of M.G.L Chapter 30A.

A copy of the proposed amendments and this background document are available on MassDEP's website at: http://www.mass.gov/eea/agencies/massdep/air/regulations/310-cmr-60-00-air-pollution-control-for-mobile-sources.html#2. Copies can also be obtained at MassDEP's headquarters at One Winter Street, Boston and at MassDEP's Southeast Regional Office, 20 Riverside Drive, Lakeville.

Please send comments to: Paul.Davis@state.ma.us.

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